

Using Cyclone Publisher

- when it has to be **right**



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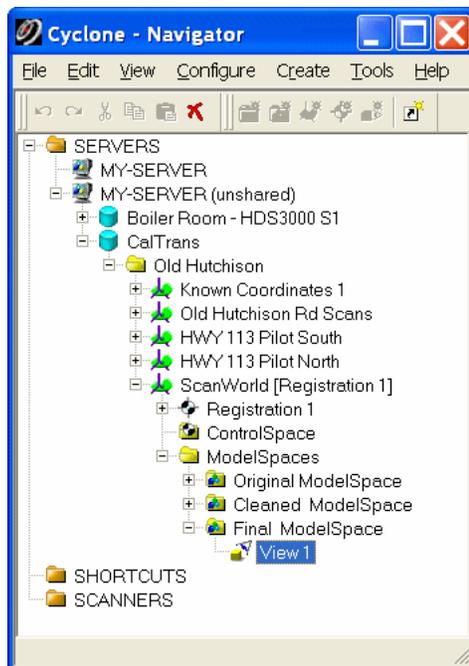
Step-by-Step Instructions

NOTE: These instructions apply to Leica Cyclone Publisher 5.7 and later.

Cyclone Publisher remembers the settings used last, so some of these steps may be skipped if the previous settings are still valid.

Step 1: Select the ModelSpace View to be published.

- The site map is used as an entry point for your Leica TruView users.
- In addition to publishing a site map, TruView data sets will also be generated.
 - See *Appendix C* for notes about how TruView data sets are generated.
- The ModelSpace View to be published will typically belong to a ScanWorld. The ScanWorld may be created from a Registration of a group of ScanWorlds, or it may be a stand-alone ScanWorld.

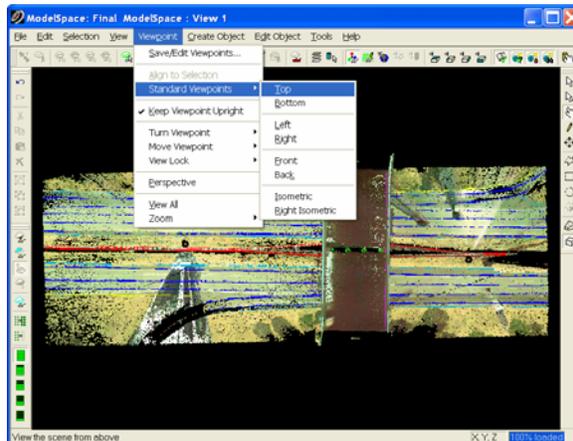


Step 2: Open the selected ModelSpace View.

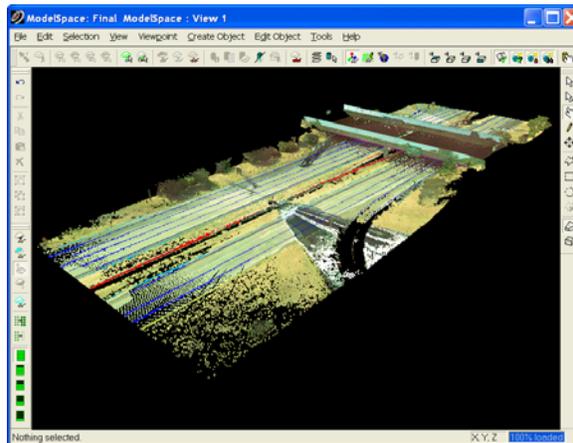
- There are several ways to open the selected ModelSpace View:
 - A. Double-click the selected ModelSpace View.
 - B. Press the **Enter** key.
 - C. Select the **Open** command from the Navigator's **File** menu.

Step 3: Set the site map's viewpoint.

- Manipulate the viewpoint of your site map. The image on the screen will provide the site map.
- Common viewpoints include:
 - A top-down orthographic view (a.k.a., “plan”).



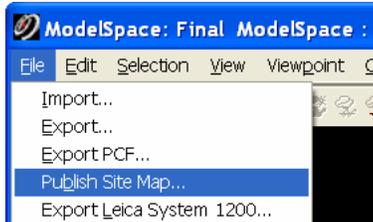
- An arbitrary perspective viewpoint.



- Try to select a viewpoint that evenly distributes the scanner locations included in your ModelSpace. This will make it easier to pick a specific scanner location from the published site map.
- Cyclone Publisher generates TruView data sets only for scanner locations that are visible in the site map.
- If you are unsure about the best viewpoint for your site map, you can re-publish it.

Step 4: Select the “Publish Site Map...” command.

- The **Publish Site Map...** command is in the ModelSpace viewer’s **File** menu.



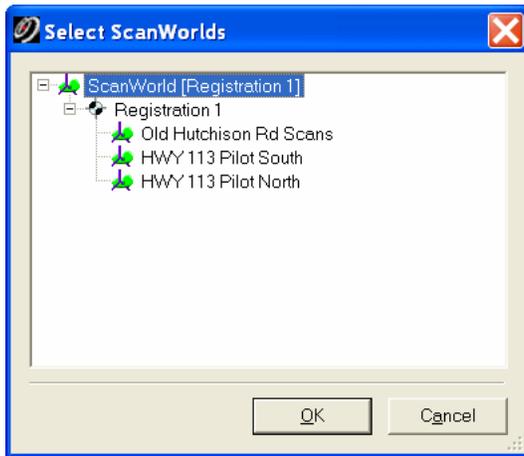
Step 5: Select the folder to contain the files to be published.

- This folder should not contain any other folders or files, since multiple files and folders will be generated using standard names.
- If desired, you can upload the entire folder to a web server later.



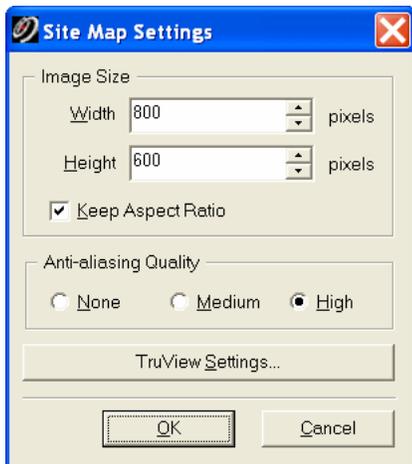
Step 6: Select the ScanWorlds to publish.

- Typically, you will select the top-most ScanWorld in the hierarchy. This will generate TruView data sets for all ScanWorlds beneath this ScanWorld.
- You can alternately expand the tree and multi-select specific ScanWorlds. This will generate TruView data sets only for the selected ScanWorlds.
- A TruView data set is generated from each participating ScanWorld's "home" position (that is, the viewpoint of the scanner that acquired that ScanWorld's scans).



Step 7: Configure the site map settings.

- The site map is an entry point to the TruView data sets.
- The settings determine the dimensions and image quality of the site map.



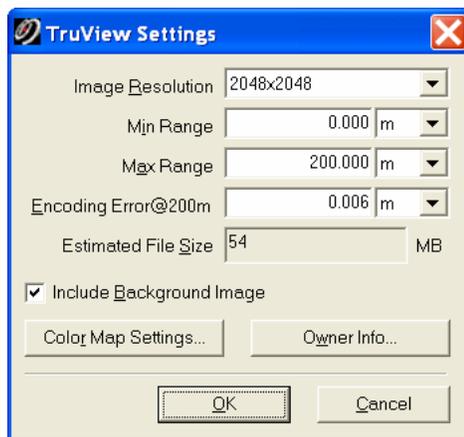
- Publishing a larger site map may help resolve smaller features and closely-spaced scanner positions.

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- A high level of antialiasing can make linear features appear smoother in the site map.
- The published site map will reflect the colors and viewpoint as displayed in the ModelSpace viewer.
- Push the **TruView Settings...** button to access additional settings that affect the TruView data sets to be generated.
- The site map and TruView data sets are not published until the **OK** button is pushed in this dialog box.
 - **NOTE:** Be sure to review the **TruView Settings** before proceeding.

Step 8: Configure the TruView settings.

- The TruView settings are applied when generating each TruView data set.

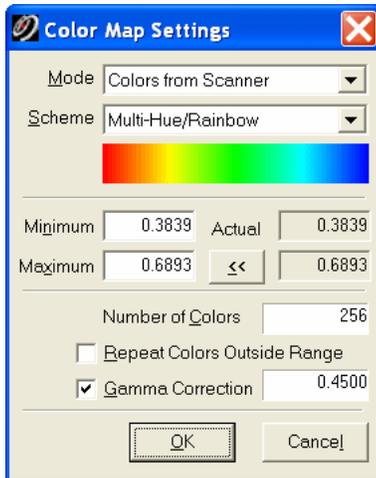


- **Image Resolution** is one of this dialog box's more important settings.
 - A lower resolution may result in a smaller TruView data set, which consumes less disk space and downloads more quickly, at the possible expense of details.
 - The optimal resolution balances the download time with the amount of content, given the primary use of the TruView data. The **Estimated File Size** field indicates the expected size of the data set. Because of data compression, the actual size may be different.
 - The maximum resolution is **2048x2048** pixels for each side of a cube that contains the viewable volume.
- **Max Range** is the range beyond which cloud points are not included.
 - The optimal maximum range can depend on the capabilities of the scanner that acquired the scan data.
- **Include Background Image** displays the image associated with the ScanWorld behind the point cloud. For best results, acquire images in the scanner's full field of view, with appropriate exposure settings.

- Pushing the **Color Map Settings...** button invokes the color configuration dialog box.

Step 9: Configure the TruView color map settings.

- This dialog box is similar to the Cyclone **Color Map Parameters** dialog box. It is used to set the color mapping of the point clouds displayed in the panoramic TruView data sets.



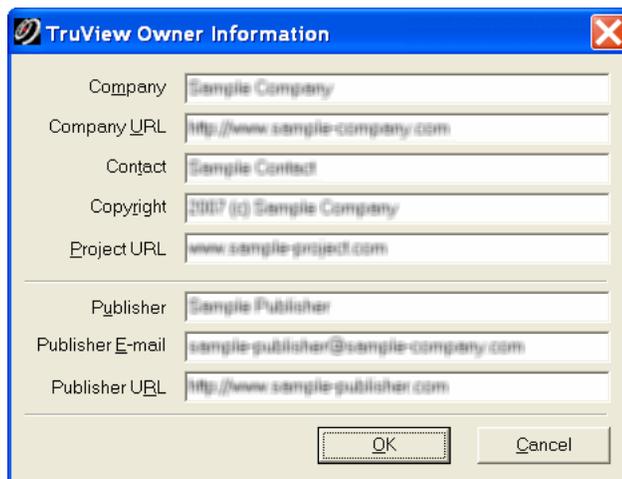
- **Mode** specifies one of several potential color sources. Some modes may not be supported by the scan data.
- The **Colors from Scanner Mode** can be used if the point cloud has colors that were acquired during the scan (e.g., if the scan data was acquired by a Leica HDS3000 or ScanStation after acquiring images with the internal camera), or if they were saved via Cyclone's **Texture Map Browser**.
 - **NOTE:** Depending on the accuracy of the camera calibration or texture mapping, the resulting TruView visualization may be slightly misleading, since points may not be colored correctly.
 - Any point cloud that lacks **Colors from Scanner** falls back onto the **Intensity Mapping** mode.
 - Point clouds from time-of-flight scanners (e.g., from HDS3000 and ScanStation scanners) are often published using the **Colors from Scanner Mode** and **Include Background Image** (from the **TruView Settings** dialog box) to resemble a color photograph.
- The **Intensity Mapping Mode** is useful for viewing the scan data based on the intensity of each point. The intensity is based in part on the material of the surface, the angle of incidence at the surface, the range to the surface, and other factors. A “brighter” point (as measured by the scanner) results in a higher intensity.

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- This can sometimes be more useful during measurements than **Colors from Scanner**, because the color of each pixel is precisely matched with the 3D sample.
- The **Scheme** is the color scheme to be used in the false-color mapping. The most commonly-used schemes are **Multi-Hue/Rainbow** and **Grayscale**.
 - Point clouds from phase scanners (e.g., from HDS4500 and HDS6000 scanners) are commonly published using the **Intensity Mapping Mode** and **Grayscale Scheme** to resemble a black-and-white photograph.
- Adjusting the **Minimum** and **Maximum** intensities in the color map can help concentrate colors in different intensity ranges.
 - If you are unsure of how to set the **Minimum** and **Maximum** intensity ranges, push the << button to transfer the actual values into the controls. This will typically result in a representative spectrum of colors, rather than having it all flattened into one color (range).
- You will usually not need to adjust the other parameters. Please refer to the Cyclone documentation for further details.
- Push the **OK** button to accept the values and return to the **TruView Settings** dialog box.

Step 10: Enter the owner information for the TruView data sets.

- Push the **Owner Info...** button in the **TruView Settings** dialog box if you wish to supply information about the provider and owner of the TruView data sets.

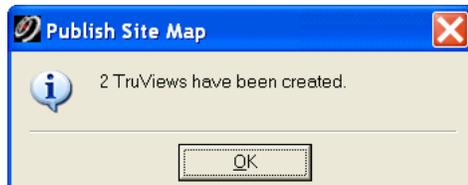


Company	Sample Company
Company URL	http://www.sample-company.com
Contact	Sample Contact
Copyright	2007 (c) Sample Company
Project URL	www.sample-project.com
Publisher	Sample Publisher
Publisher E-mail	sample-publisher@sample-company.com
Publisher URL	http://www.sample-publisher.com

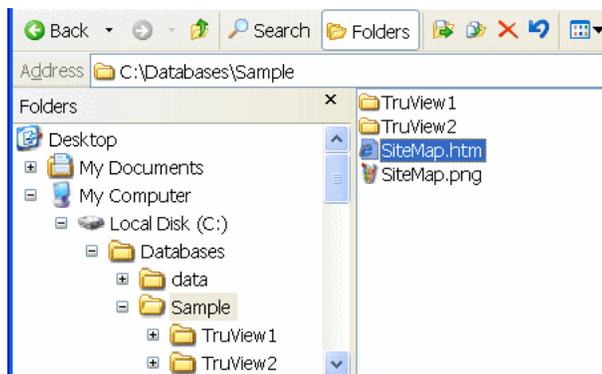
- This information can be accessed via the  (**Meta data information**) button in the Leica TruView plug-in.

Step 11: Generate the site map and TruView data sets.

- Push the **OK** button in the **Site Map Settings** dialog box to publish the data.
- Processing time may take from several seconds up to several minutes for each participating ScanWorld, depending on the TruView settings and number of points in that ScanWorld.
- Cyclone reports when publication is complete.

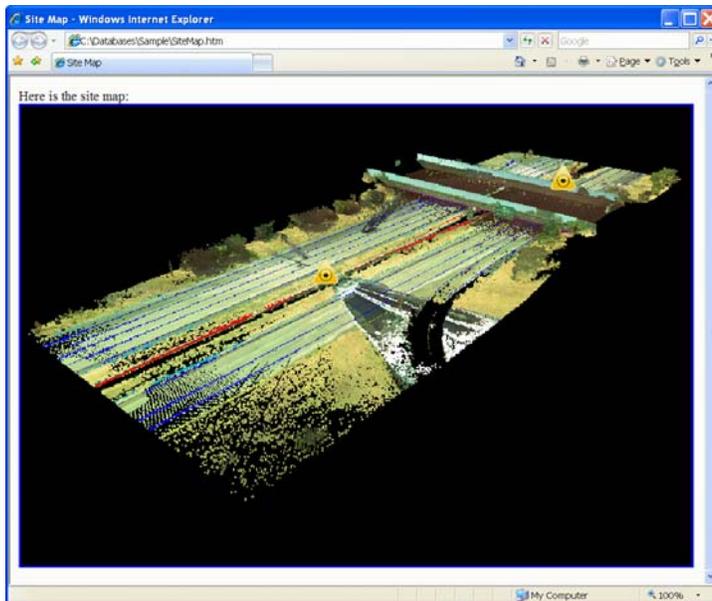


- Each TruView data set resides in its own numbered subfolder under the folder selected in *Step 5*. The folder also includes the `SiteMap.htm` file.



Step 12: Inspect the published data.

- Open SiteMap.htm using Internet Explorer. Hotspots (indicated by the  icon) represent each scanner location that has a TruView data set.
- Click each hotspot to open the TruView data set for that scanner location.
- **NOTE:** You must have the Leica TruView plug-in installed to view the TruView data set. The Leica TruView plug-in is available for download at <http://www.leica-geosystems.com/hds/en/63727.asp>
 - If a user attempts to view a TruView data set without the Leica TruView plug-in installed, an informative message appears and displays the download link.



Step 13: Share the site map and TruView data sets.

- You can simply copy or upload the entirety of the folder selected in Step 5 (including SiteMap.htm and TruView subfolders) to any web- or intranet-visible location, and anyone with the Leica TruView plug-in can dynamically view this data. Simply provide the URL to SiteMap.htm.
- There is no web server-side software required for hosting the site map or TruView data sets.
- For additional hints on posting the published data to a web site, see Appendix A.

Appendices

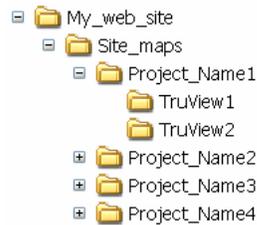
Appendix A: Posting TruView data sets to your web site.

Folder hierarchy

- Cyclone Publisher publishes TruView data with the following folder hierarchy:
 - ▣ ProjectFolder
 - SiteMap.htm
 - SiteMap.png
 - ⊕ TruView1
 - ⊕ TruView2
 - ⊕ TruView3
 - ⊕ TruView4
 - ⊕ TruView5
- Each time you publish a site map with TruView data, Cyclone Publisher creates a `SiteMap.htm` document, a `SiteMap.png` image (the icon for the hotspots), and a set of subfolders with image, data and executable files.
 - There is one subfolder for each included ScanWorld. These subfolders are automatically named “TruView1”, “TruView2”, etc.
 - `SiteMap.htm` has links to each of the TruView data folders. The default links use *relative paths*, so the references are internally consistent as long as the folder hierarchy is maintained. Otherwise, modify the HTML references in `SiteMap.htm` as needed.
 - **NOTE:** For internal consistency, the generated files must not be renamed or reorganized. File names must not be truncated or converted to all upper or all lower case.
- To post these files to a web site, you need to upload (typically via an FTP client) all of the files and folders to your web server.
- When users browse to the `SiteMap.htm` document and activate a TruView hotspot, the TruView data set in the corresponding “TruView#” subfolder below the `SiteMap.htm` document is activated.

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- Because Cyclone Publisher uses the same standard file and subfolder names, each set of published data should reside in its own server directory.
 - **EXAMPLE:** Your web site directory hierarchy might resemble the following:

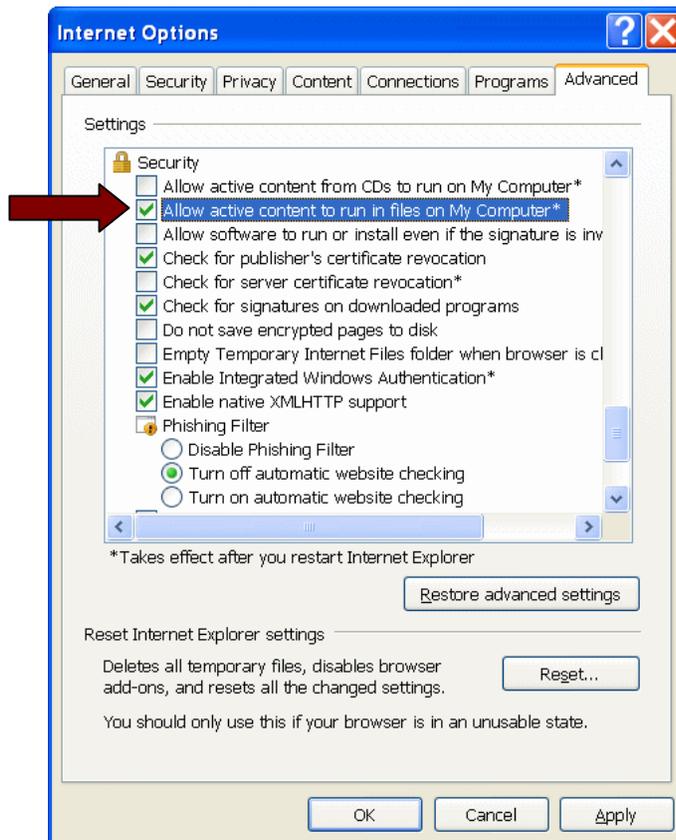


Web server settings

- Some web server settings may require modification to allow the necessary access to the site map and TruView data sets. Otherwise, the Leica TruView plug-in may receive an HTTP Error 404 (file or directory not found).
- The TruView data sets contain files with the .DAT extension. The MIME type for the .DAT extension must be enabled on the server for the directories that contain the TruView data sets (“TruView1”, “TruView2”, etc.). This is most conveniently done at some root folder that includes all TruView data folders so that it only needs to be set once.
- For more information, see the following:
 - <http://support.microsoft.com/kb/326965>
 - <http://technet2.microsoft.com/WindowsServer/en/library/913c30e3-d0bc-483f-965d-a23a9adab59d1033.msp>

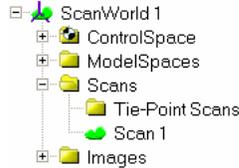
Appendix B: Leica TruView plug-in security settings.

- If you are running the Leica TruView plug-in on Windows XP SP2 or later, the Internet Explorer security settings may cause a warning to appear at the top of your browser window, requiring your click to allow the Leica TruView plug-in to run. At your discretion, you can adjust your Internet Explorer security settings to silently bypass this warning.
 - **NOTE:** You should understand the potential security risks before adjusting your Internet Explorer security settings.
- In Internet Explorer,
 1. Select the **Internet Options** command from the **Tools** menu to invoke the **Internet Options** dialog box.
 2. Select the **Advanced** tab.
 3. Scroll to the **Security** section.
 4. Add a check mark in the **Allow active content to run in files on My Computer** option.
 5. Push the **OK** button.

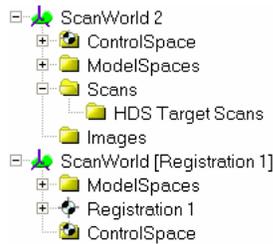


Appendix C: Rules affecting TruView data set generation.

- TruView data sets are also generated when publishing a site map using Cyclone Publisher.
 1. A TruView data set can be generated for a ScanWorld that contains at least one scan.
 - In this example, “ScanWorld 1” has at least one scan of its own.



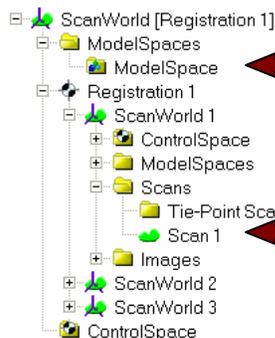
2. A TruView data set cannot be generated from a ScanWorld that does not directly contain scans of its own.
 - In this example, publishing “ScanWorld [Registration 1]” will not directly result in a TruView data set corresponding to its own contents, but the ScanWorlds registered beneath it may result in corresponding TruView data sets.



- The set of point clouds displayed in an individual TruView data set is determined by several rules:

1. The point clouds in the individual ScanWorld (with at least one Scan) are used, not the point clouds in the ModelSpace from which the site map is being published.

- Example:



← The point clouds in the ModelSpace used to publish the site map are ignored when generating the TruView for ScanWorld 1.

← Only the point clouds in this individual ScanWorld are used when generating its corresponding TruView data set.

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2. Normally, the original, unaltered scans in that ScanWorld are used. These original scans can be overridden by two commands, if used in a ModelSpace belonging to that ScanWorld:
 - A. The **Set as Default Cloud** command (in the **Scanner** submenu of the **Tools** menu) replaces the original scan with an edited version of that scan. The editing can include deletion of extraneous points.
 - B. The **Set ScanWorld Default Clouds** command (in the **Scanner** submenu of the **Tools** menu) makes the ScanWorld treat the current set of point clouds in the ModelSpace as the default clouds.
 - The default point clouds are used instead of the scans when a new ModelSpace is created from this ScanWorld.
 - The point clouds do not need to be based on the ScanWorld's own scans. The point clouds may be unified or even copied from other ModelSpaces.
 - **Set ScanWorld Default Clouds** overrides **Set as Default Cloud**.